

Installation Guide
10Base-T Ethernet Hub
Model: DH8T

DOC.980213-DH8T-K
P/N: 750-0104-001

KTI Networks Inc. All rights reserved. No part of this documentation may be reproduced in any form or by any means or used to make any directive work (such as translation or transformation) without permission from KTI Networks Inc.

KTI Networks Inc. reserves the right to revise this documentation and to make changes in content from time to time without obligation on the part of KTI Networks Inc. to provide notification of such revision or change.

For more information, contact:

United States

KTI Networks Inc.
P.O. BOX 631008
Houston, Texas 77263-1008
Phone: 713-2663891 Fax: 713-2663893
BBS: 713-2663015 E-mail: kti@ktinet.com
Web: <http://www.ktinet.com/>

International

Fax: 886-2-26983873
E-mail: kti@ktinet.com.tw
Web: <http://www.ktinet.com.tw/>

The information contained in this document is subject to change without prior notice.

Copyright © KTI. All Rights Reserved.

TRADEMARKS

Ethernet is a registered trademark of Xerox Corp. NetWare is a registered trademark of Novell Inc.

WARNING:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference in which case the user will be required to correct the interference at his own expense.

NOTICE:

(1)The changes or modifications not expressively approved by the party responsible for compliance could void the user's authority to operate the equipment.

(2)Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

CISPR A COMPLIANCE:

This device complies with EMC directive of the European Community and meets or exceeds the following technical standard.

EN 55022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. This device complies with CISPR Class A.

WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

CE NOTICE

Marking by the symbol **CE** indicates compliance of this equipment to the EMC directive of the European Community. Such marking is indicative that this equipment meets or exceeds the following technical standards:

EN 55022: Limits and Methods of Measurement of Radio Interference characteristics of Information Technology Equipment.

EN 50082/1:Generic Immunity Standard -Part 1: Domestic Commercial and Light Industry.

EN 60555-2: Disturbances in supply systems caused by household appliances and similar electrical equipment - Part 2: Harmonics.

10BASE-T ETHERNET HUB

INSTALLATION GUIDE

DOC.980214-DH8T-NK
P/N:750-0104-002

Table of Contents

Chapter 1 Introduction

Introduction	1
Features	2

Chapter 2 Installation

Installation	3
Checking AC Power	3

Chapter 3 Making Network Connection

Network Connectors	4
Connecting to an Ethernet Node	5
Hub to Hub Connection via UTP Cable	6

Chapter 4 Interpreting Hub LEDs

Locations of the Hub LED Indicators	8
Interpretation	8

Appendix

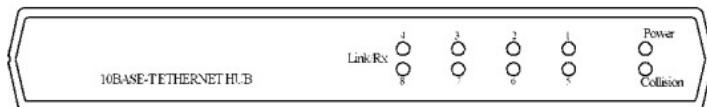
Specifications	10
RJ-45 Jack Pin Assignments	10
UTP Cabling Specifications	11

1. Introduction

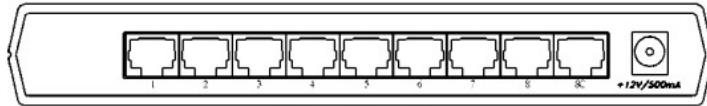
Introduction

This hub is an Ethernet Hub designed for the 10Base-T environment. In terms of topology, twisted-pair Ethernet 10Base-T is defined as a star topology rather than a bus. Each port on the hub connects to only one 10Base-T device via unshielded twisted-pair (UTP) cable.

The hub provides eight Twisted-Pair (TP) ports (RJ-45 Jacks) and one 12V DC power socket on the rear panel. On the front panel, there are ten LED indicators for displaying the port status and the hub status. The following figure illustrates the front panel and rear panel of the hub:



Front Panel



Rear Panel

Features

- Network ports: 8 TP ports
- Standard: TP ports conform to IEEE 802.3 10Base-T std.
- Provides an additional RJ-45 jack labeled '8C' on the TP Port #8 for connecting to another hub. A standard straight-through 10Base-T UTP cable can be used for the hub-to-hub connection.
- Each TP port has one Link/Rx LED to indicate the link and receiving activity status of the UTP link segment.
- Each TP port can detect and correct wiring polarity reversal automatically.
- Two LEDs are provided to indicate other activities of the hub:

Power LED	Power status
Collision LED	Network collision status

2. Installation

Installation

You can place the hub in an area that meets the following specifications:

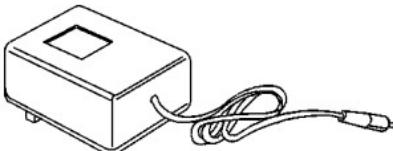
Temperature: 5° to 40°C when operating

Humidity: 10% to 80% when operating

Dimension: 195 mm x 129 mm x 28 mm (WxDxH)

Checking AC Power

One AC power adapter is contained in the hub package. Before you begin the installation, check the AC voltage of your area. The AC power adapter which is used to supply the DC power for the hub should have the AC voltage matching the commercial power voltage at your area.



The specifications of the AC power adapter are:

AC input power: AC power voltage of your area

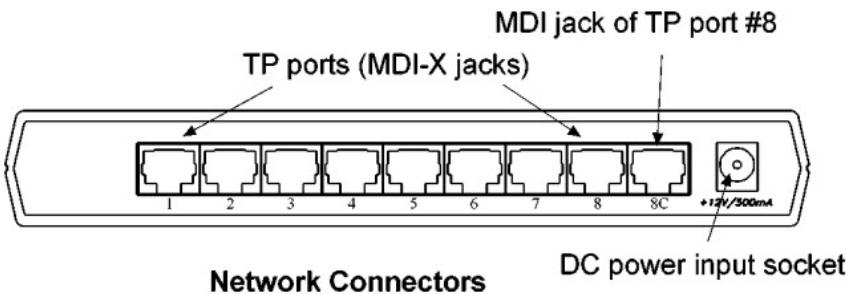
DC output power: 12 VDC 500mA min.

DC plug type: - — +

3. Making Network Connections

Network Connectors

The hub has 8 TP ports which are presented by 8 RJ-45 jacks. The jacks labeled 1 through 8 are permanently configured as 10Base-T MDI-X jacks and the jack labeled '8C' next the jack labeled '8' is an alternative jack which is configured as MDI jack for the TP port #8. Both jacks can not be used at the same time.



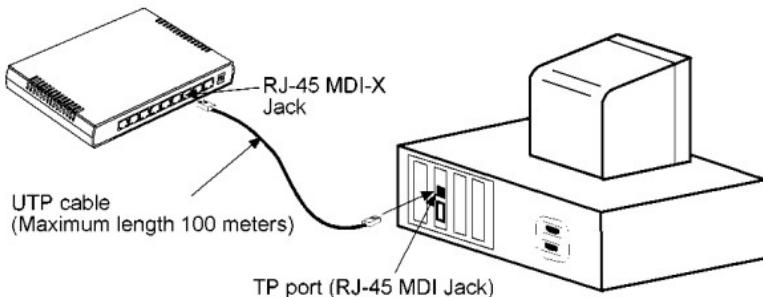
The MDI-X jacks can support connections to 10Base-T Ethernet nodes or lower level hubs via 10Base-T UTP cables. The MDI jack '8C' is used for connecting to an upper level hub.

A 10Base-T UTP cable can be a Category 3, 4, or 5 unshielded twisted-pair cable with an RJ45 plug at each end.

Connecting to an Ethernet Node

To connect the hub to a 10Base-T Ethernet node, follow these steps:

1. Select an appropriate length of 10Base-T UTP cable for the connection.
2. Connect one end of the UTP cable to the MDI jack on the remote device (e.g., a PC equipped with 10Base-T Ethernet adapter).
3. Connect the other end of the UTP cable to an available MDI-X jack on the hub. It is better to reserve jack #8 for a connection to another hub.

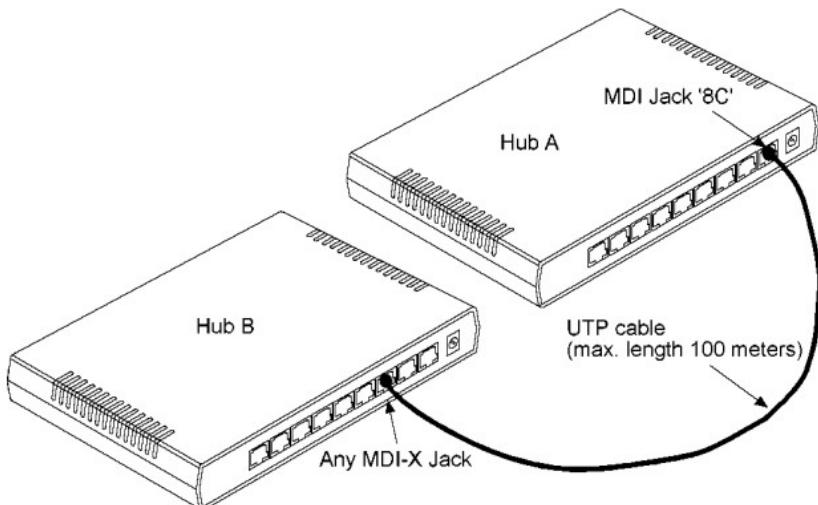


Make sure that the connector on the cable is wired appropriately for the standard 10Base-T node. The 'straight through' connection should be made from the node through the cable and connectors to the hub. Refer to Appendix 'RJ-45 Jack Pin Assignments' for the information of UTP wire pairs.

Hub to Hub Connection via UTP Cable

When the number of 10Base-T nodes in your network exceeds eight, you need to connect at least two hubs to integrate all 10Base-T nodes into one network. You may connect one hub to another hub by using an ordinary UTP cable as the following steps:

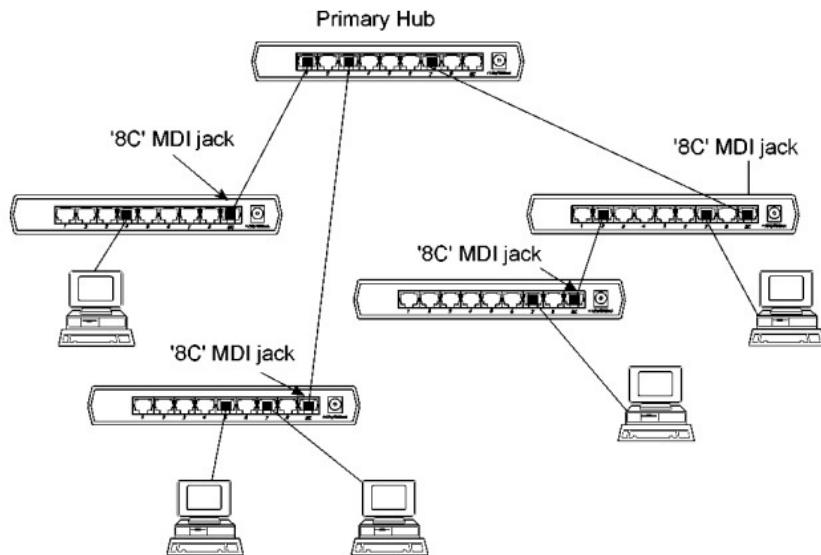
1. Connect one end of the UTP cable to the jack labeled '8C' of Hub A.
2. Connect the other end of the cable to any available MDI-X jack of Hub B.



The maximum length of the UTP cable connecting two hubs is 100 meters.

When connecting more than two hubs via TP ports and UTP cables, it is important to minimize the number of hubs in any path of the network.

You may select one hub to serve as a primary hub to which other hubs will be connected. This will minimize the number of hubs in any path (node to node) on the network. The following figure illustrates an example of connection topology:

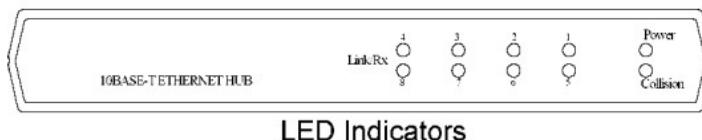


4. Interpreting Hub LEDs

Locations of the Hub LED Indicators

The hub provides the following LEDs :

- One Power status LED
- One Collision status LED
- Eight Link and activity status LEDs. One for each TP port



LED Indicators

Interpretations

Power LED

The LED indicates the status of the hub's power source. Match the activity of the LED with one of the states indicated in the table.

<u>State</u>	<u>Indication</u>	<u>Interpretation</u>
On	Normal	The power of the hub is on.
Off	Problem	No power is being supplied to the hub.

Collision LED

This LED indicates the collision detected by the hub. The LED is normally off and it blinks when there are collisions. As the frequency of collisions on a network increases, the blink activities (on-time) of the LED also increase.

Link/Rx LED

Each TP port has one Link/Rx LED to indicate the link status and receiving activities of the connection to the attached device.

State Indication

On Normal

Blink Normal

Off Normal

Interpretation

the UTP link is in good condition and no receiving activities are present.

the UTP link is in good condition and there receiving activities are present.

No active device is connected at the other end of the UTP link.

Appendix

Specifications

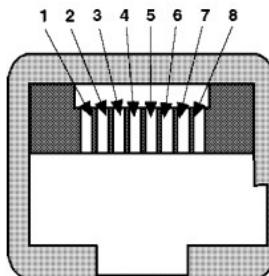
Temperature: Operating 5° to 40° C
 Storage -40° to 70° C

Humidity: Operating 10% to 80%
 Storage 5% to 90%

Dimension: 195mm (W) x 129mm (D) x 28mm (H)
 7.7 inch (W) x 5.1 inch (D) x 1.1 inch (H)

RJ-45 Jack Pin Assignments

The following illustrations indicate the pin assignments of the RJ-45 jacks on the hub.



Jacks '1'-'8'

Pin	Jack Assignment	Jack Assignment
1	INCOMING DATA 1(+)	OUTGOING DATA1(+)
2	INCOMING DATA 1(-)	OUTGOING DATA 1(-)
3	OUTGOING DATA 1(+) INCOMING DATA 1(+)	
4	(No Connection)	(No Connection)
5	(No Connection)	(No Connection)
6	OUTGOING DATA 1(-)	INCOMING DATA 1(-)
7	(No Connection)	(No Connection)
8	(No Connection)	(No Connection)

Jack '8C'

UTP Cabling Specifications

The hub's TP ports support standard 10Base-T cable topologies and types, including Category 3, 4, or 5 unshielded twisted pair cable. The maximum length supported by the Ethernet is 100 meters of UTP cable. The cable, quality, distance, and connectors must comply with the EIA/TIA 568 'Commercial Building Wiring Standard'.

The following figure illustrates the cable types used for different connections:

